PCR Optimization for Mapping Intraspecific Cross in Rice. (C01-choi033140-Poster)

Authors:

- I.Choi* - *Miryang National University, Korea*
- B.Kim. - *Miryang National University*
- H.Kong - *Miryang National University*

Abstract:

High density molecular map is a prerequisite for idenetifying the genes of use in crops. People have difficulty in constructing the genetic map in case of near relationship such as intraspecific crosses. The objective of this study was to get as many polymorphic bands as possible in case of near relationship. We made factorial experiment for template DNA concentration, MgCl2 concentration, and amount of taq polymerase. Another factorial experiment for reaction temperature(denature, annealing, extension) was also conducted for major crops, horticultural crops, and fruits including rice, perilla, tomato, hotpepper, and peach. Results varied at different crops. In most crops, the most clear and reproducible bands were identified from 60ng of template DNA, 2.5mM and 4.5mM of MgCl2, and 0.5 unit and 1 unit of taq polymerase. Reaction temperatures for the optimal PCR condition were also varied at different crops. In many crops, the combination of 86C, 35C, 64C; 90C, 40C, 72C and 92C, 36C, 72C were best for clear and reproducible bands. Currently, we are undergoing to construct the high density RAPD molecular maps in rice and perilla using these markers.

Corresponding Author Information:

In-Soo Choi
Miryang National University
1025-1, Dept. of Plant Resources, Miryang Univ.
Miryang 627-130
Korea

phone: 055-350-5365
fax: 055-350-5360
e-mail: ichoi@arang.miryang.ac.kr

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